2050ED* 2727801

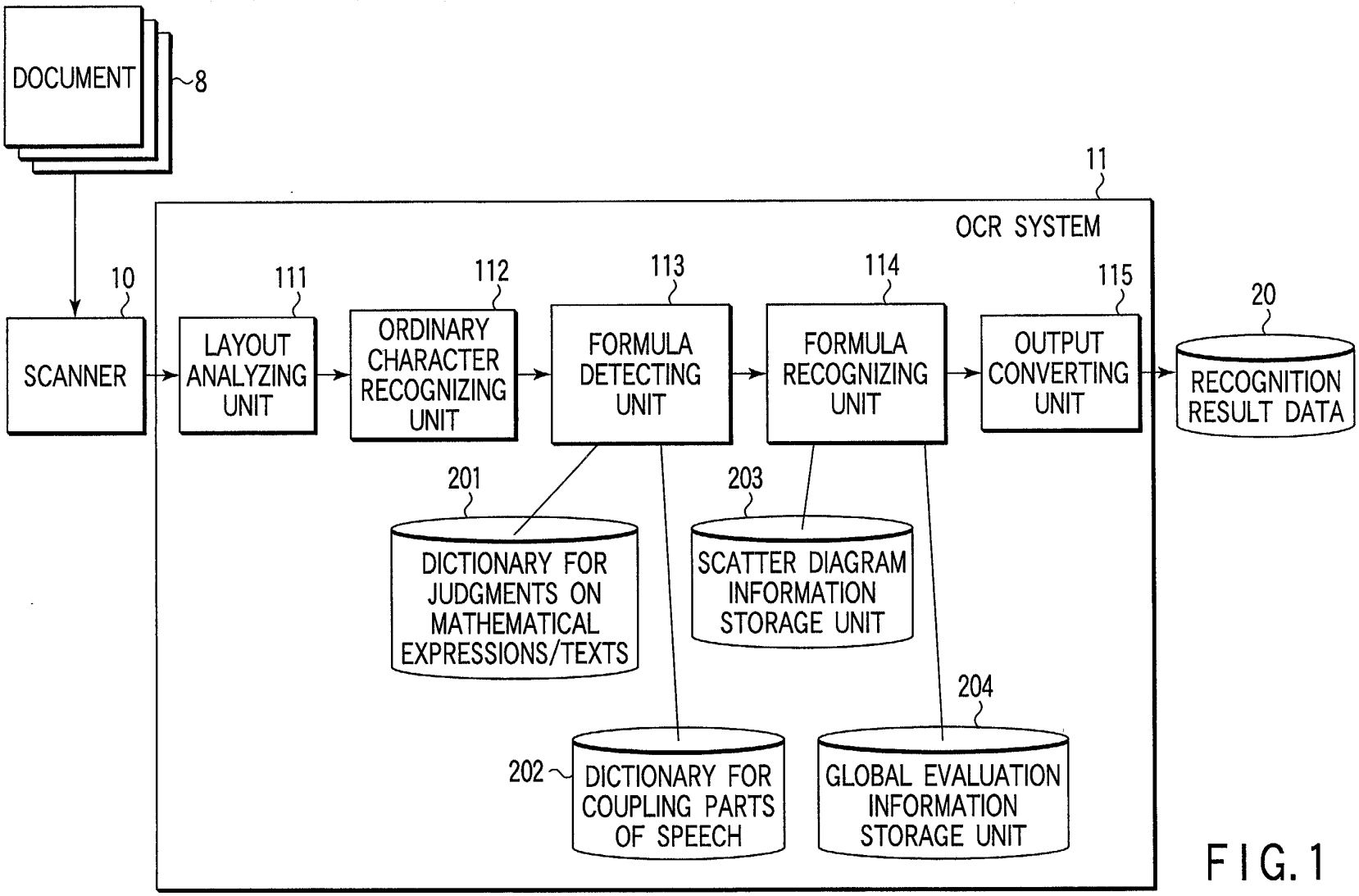


FIG. 1

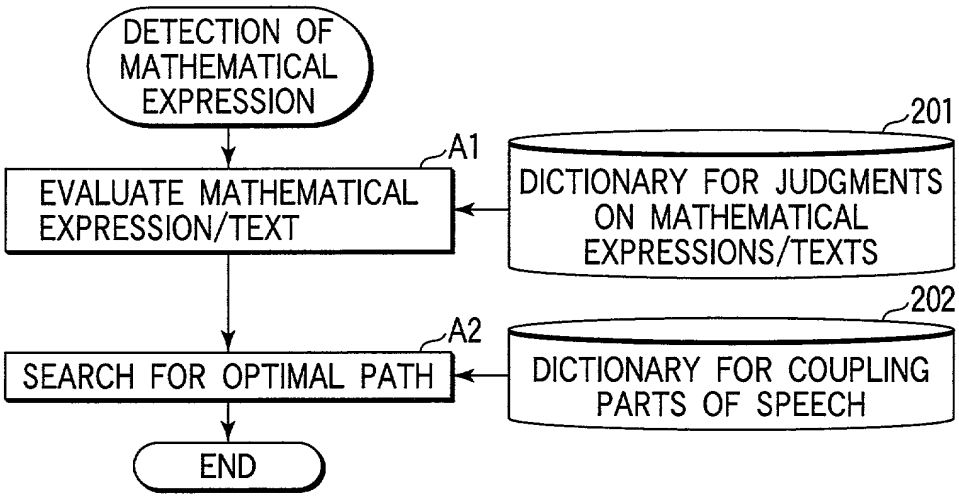


FIG. 2

Original Image		with $f(X)=X$,				where U is a			
Recognized Result		with f (,＼)=,＼				where U is a			
Evaluation	Math	0	90	100	100	0	90	70	90
	Text	100	40	20	20	100	40	70	90

FIG. 3

201

NO.	WORD	PART OF SPEECH	MATH	TEXT
1.	with	PP	0	100
2.	where	PN	0	100
3.	is	V	70	70
4.	a	ART	90	90
5.	.*[^ a-z].*	N	100	70
6.	.*[^ a-z].*[^ a-z].*	N	100	40
7.	.*[^ a-z].*[^ a-z].*[^ a-z].*	N	100	20
8.	[a-z]*	N	90	40
9.	.*	N	100	5
⋮	⋮	⋮	⋮	⋮

DICTIONARY FOR JUDGMENTS ON MATHEMATICAL EXPRESSIONS/TEXTS

FIG. 4

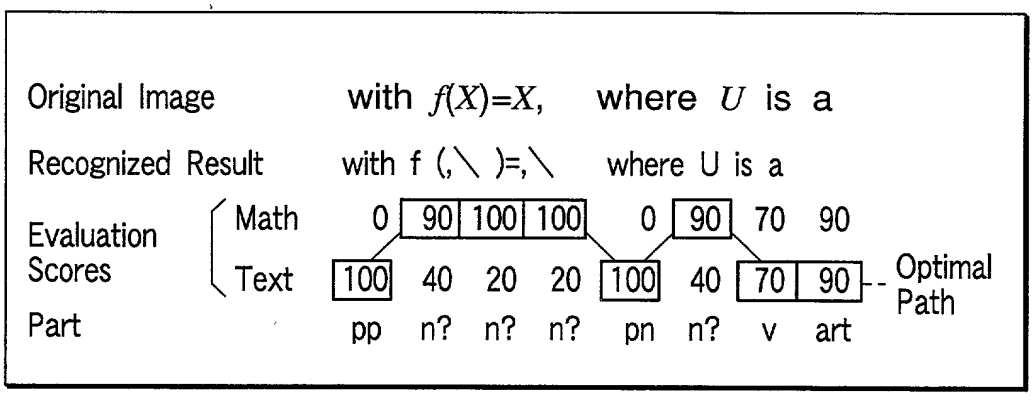


FIG. 5

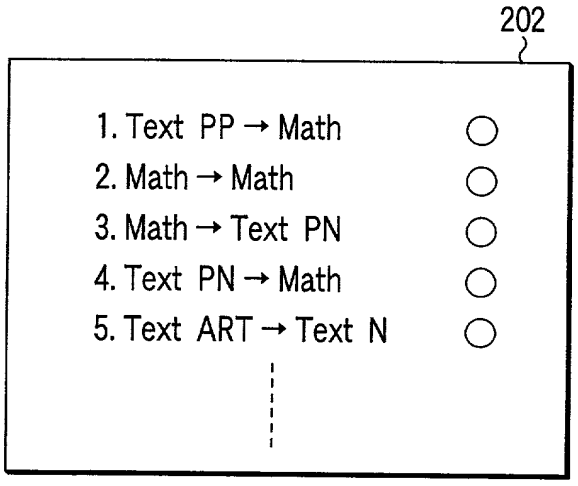

202
1. Text PP → Math
2. Math → Math
3. Math → Text PN
4. Text PN → Math
5. Text ART → Text N
DICTIONARY FOR COUPLING PARTS OF SPEECH

FIG. 6

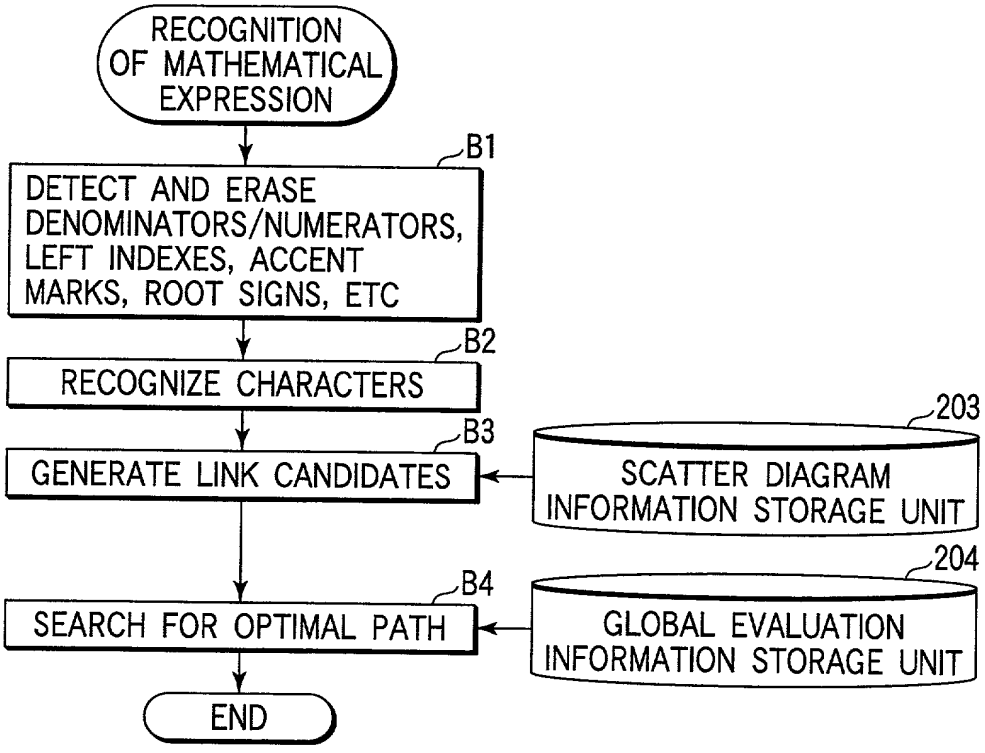

RECOGNITION OF MATHEMATICAL EXPRESSION
B1
DETECT AND ERASE DENOMINATORS/NUMERATORS, LEFT INDEXES, ACCENT MARKS, ROOT SIGNS, ETC
B2
RECOGNIZE CHARACTERS
B3
GENERATE LINK CANDIDATES
203
SCATTER DIAGRAM INFORMATION STORAGE UNIT
B4
SEARCH FOR OPTIMAL PATH
204
GLOBAL EVALUATION INFORMATION STORAGE UNIT
END

FIG. 7

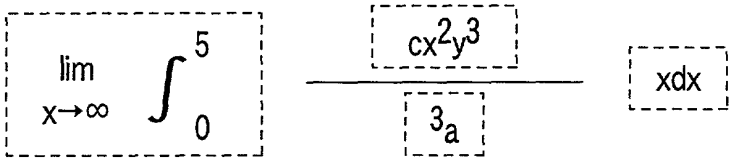


FIG. 8

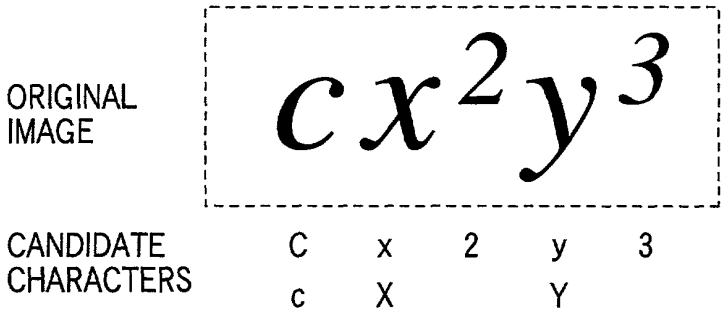


FIG. 9

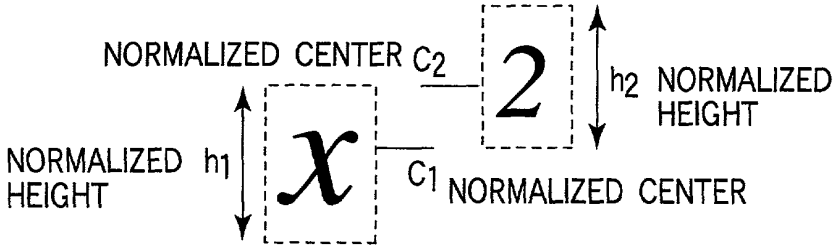
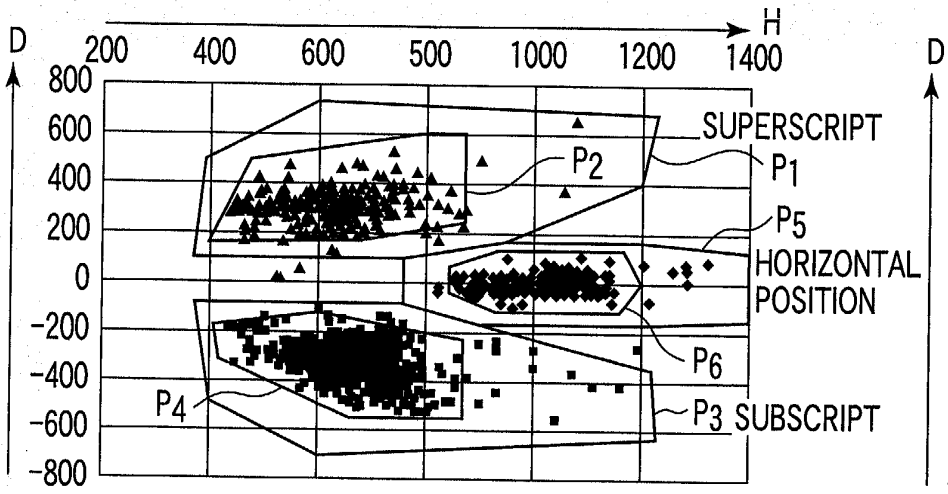
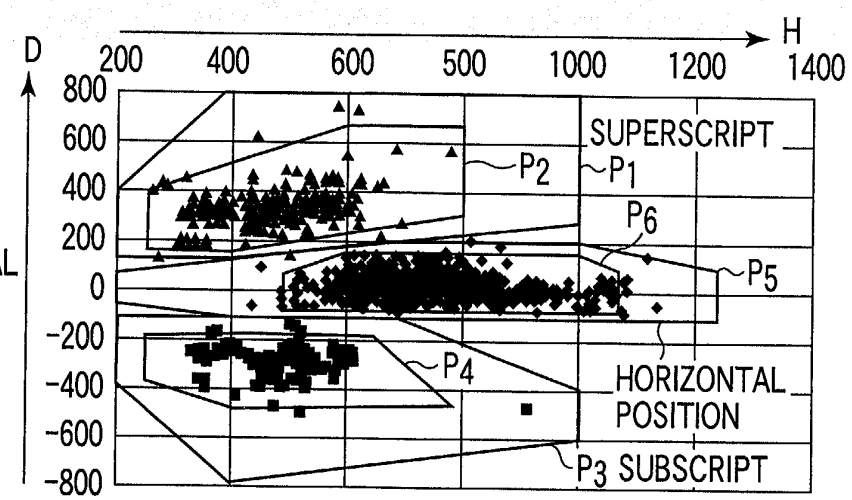


FIG. 10



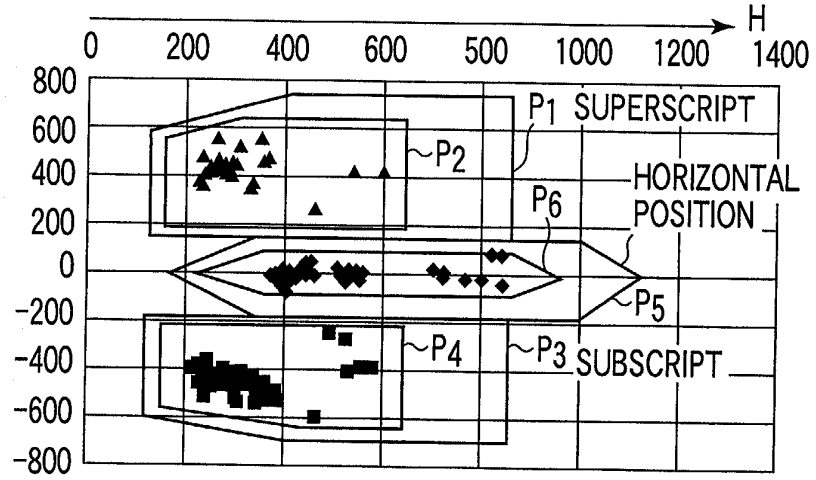
ALPHABET TYPE - ALPHABET TYPE

FIG. 11A



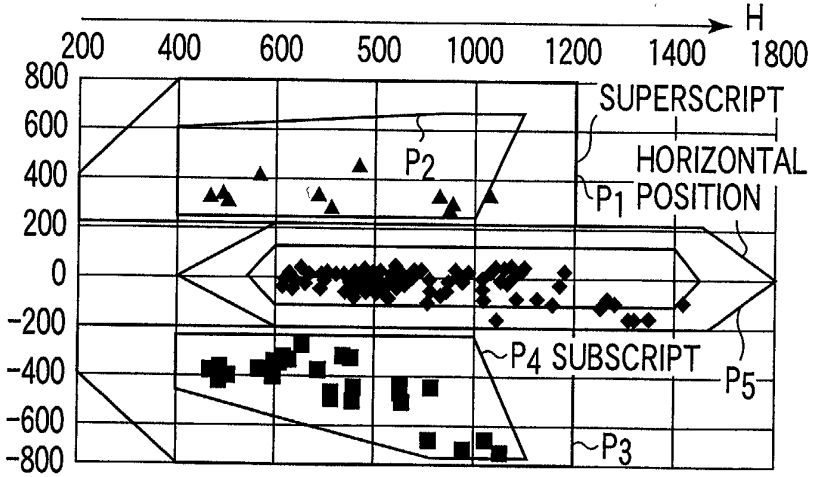
ALPHABET TYPE - OPERATOR

FIG. 11B



INTEGRAL - ALPHABET TYPE

FIG. 11C



ΣTYPE - ALPHABET TYPE

FIG. 11D

JP2005-346600A

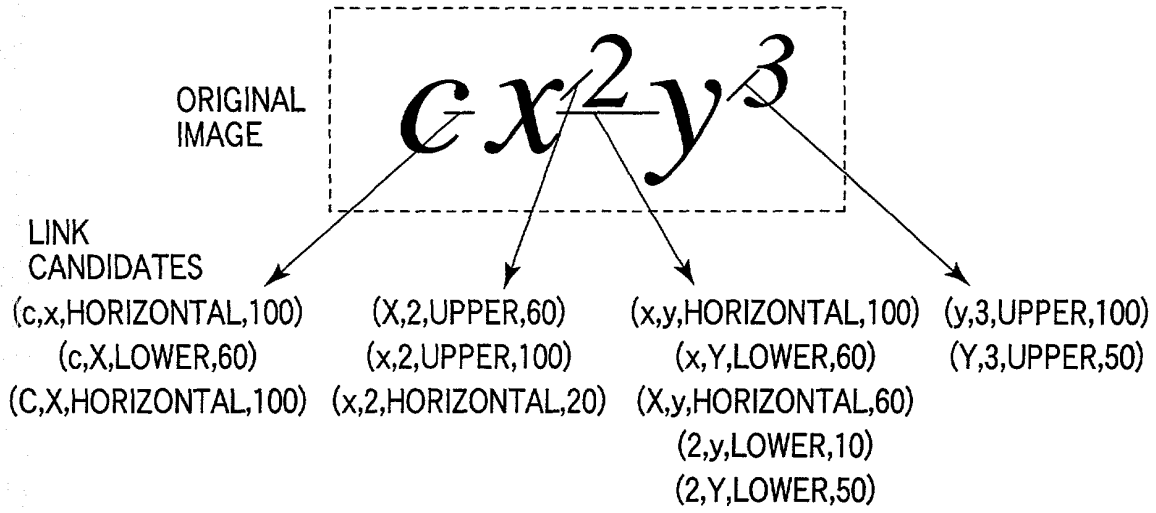


FIG. 12

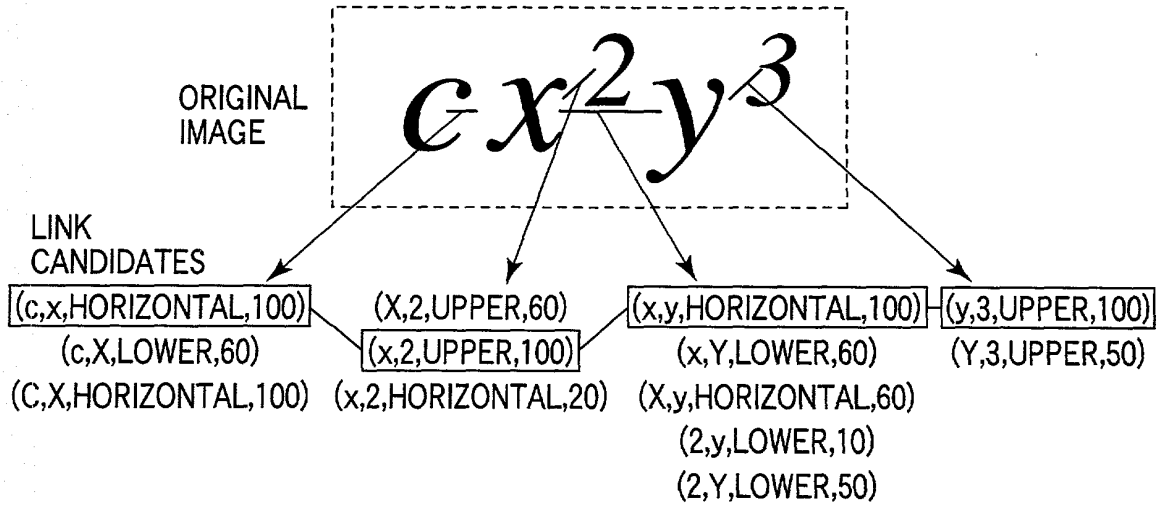
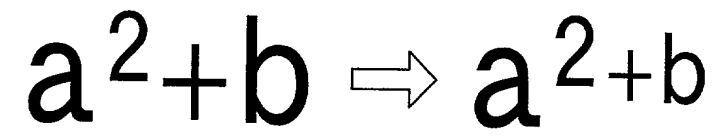
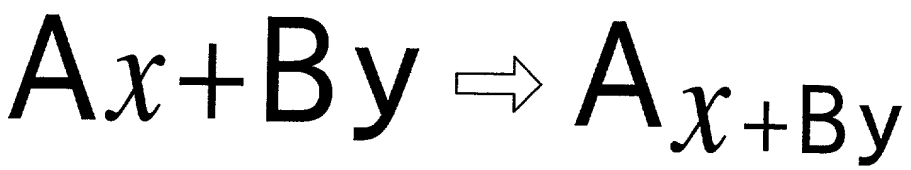


FIG. 13



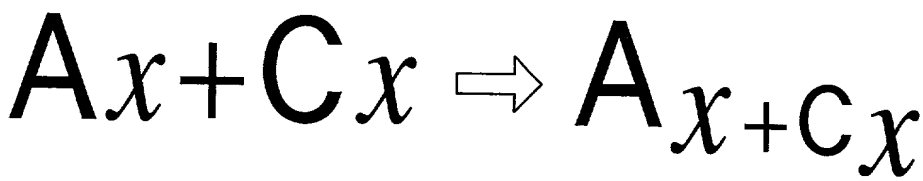
"b" FOLLOWING "2" IS MISJUDGED TO BE CONTAINED IN THE INDEX REGION OF "2" BECAUSE "+" IS MISJUDGED TO BE AN INDEX OF "2". THE CHARACTER SIZE OF "b" NEEDS TO BE MADE LARGER THAN "2" AND THE GLOBAL EVALUATION NEEDS TO BE REDUCED.

FIG. 14A



"x" IS MISJUDGED TO BE CAPITAL LETTER "X" AND "B" LOCATED ON THE BASE LINE WITH A IS MISJUDGED TO BE IN THE INDEX REGION. THE GLOBAL EVALUATION NEEDS TO BE REDUCED.

FIG. 14B



"C" IS MISJUDGED TO BE SMALLER LETTER "c" AND CONSEQUENTLY THE SIZE OF NORMALIZATION OF "c" BECOMES LARGER THAT THE SIZE OF NORMALIZATION OF "A". THE GLOBAL EVALUATION NEEDS TO BE LOWERED.

FIG. 14C